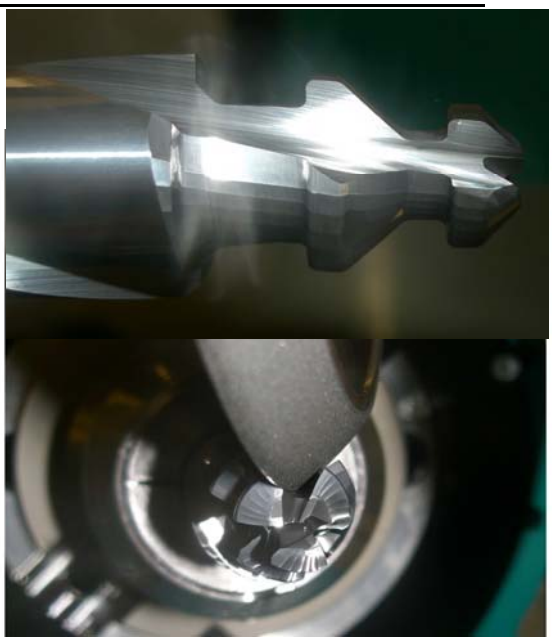
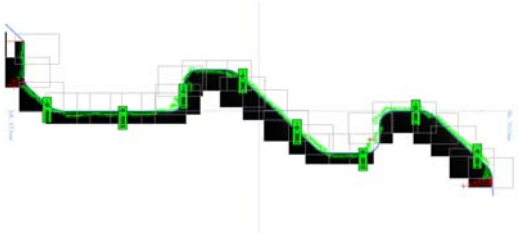
Application Data Sheet

Fir Tree Cutter Ø20 Z3

A02-041

In order to reach cutting capabilities of the firtree cutter at the deepest parts of the profile the wheel shape can be designed according to inverse calculations. Grinding with a standard wheel would lead to negative rakes in the bottom parts. Profile finishing is executed in 5 to 7 facettes distributed on a width of 1.5 - 2 mm, diameter dependend, as being an approximation to radial relief.





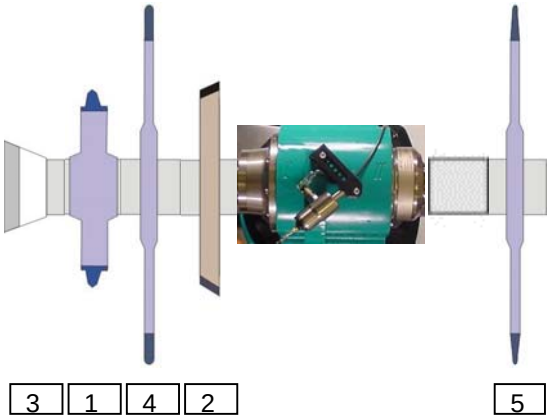
1. Cycletime for Production

Workpiece: Diameter 20 mm, Z 3, Length of cutting edge 35 mm, Helix angle 10º Material HSS									
Operations	Probe	Flute 1	Flute 2	Gashing	End 2	End 1	Prf Rough	Prf Pgrd	Prf fin
Feed [mm/Min]	2000	35	100	80	60	90	70	55	120
Power [kW]		3	2	2	1	1	3	2	1
Cutting feed [m/s]		20	20	22	24	24	22	22	24
Used wheels		1	1	2	3	3	4	5	5
Grinding time [s]	6	210	96	78	38	30	1275	851	584
Total cycle time	52 Min 46								

The cycle times are indicative. Material to be ground, grinding wheels, coolants can influence the cycle times considerably.

2. Used Grinding Wheels

1	DXF Ø125 B126
2	1V1 Ø125 B126
3	11V9 Ø75 B106
4	14F1 Ø200 B126
5	14EE1 Ø200 B126



3 1 4 2 5

3. Machine and Software Requirements

Machines: 5 axes CNC grinders : NORMA CFG
Control: Fanuc 31i
Accessories:
Coolant: Synthetic Oil, pressure 6 bar
Software: Quinto 5

Responsable engineer: OP, 20.8.09

www.schneeberger.ch
J. SCHNEEBERGER Maschinen AG 4914 Roggwil Switzerland
Subsidiaries in: France, Deutschland, Italia, United States, China

TECHNOLOGY FOR TOOLING